

CHANGE REQUEST COVER SHEET

Change Request Number: 10-26

Date Received: 2/2/2010

Title: Corrections to V&V

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Policy OR Guidance: Policy

Section/Text Location Affected: 2.1.7, figure 2.3.4-1, 2.3.4.2, 2.4.4.1, 2.4.4.2, figure 2.5.1-1, 2.5.1, 2.7.2

Summary of Change: Adds V&V sentences to investment analysis; adds link to V&V guidance in AMS section; updates CRD and SI flowcharts; deletes reference to V&V guidelines from what must be done in every AMS phase.

Reason for Change: Minor changes to correct inconsistencies.

Development, Review, and/or Concurrence: Acquisition Policy Group

Target Audience: FAA acquisition workforce

Potential Links within FAST for the Change: see separate

Briefing Planned: No

ASAG Responsibilities: None

Potential Links within FAST for the Change: see separate

Links for New/Modified Forms (or) Documents (LINK 1) [null](#)

Links for New/Modified Forms (or) Documents (LINK 2) [null](#)

Links for New/Modified Forms (or) Documents (LINK 3) [null](#)

SECTIONS EDITED:

Acquisition Management Policy:

Section 2.1.7 : Verification and Validation [\[Old Content\]](#)[\[New Content\]](#) [\[RedLine Content\]](#)

Acquisition Management Policy:

Section 2.2 : Research and Systems Analysis [\[Old Content\]](#)[\[New Content\]](#) [\[RedLine Content\]](#)

Acquisition Management Policy:

Section 2.3.4.1 : What Must Be Done [\[Old Content\]](#)[\[New Content\]](#) [\[RedLine Content\]](#)

Acquisition Management Policy:

Section 2.4.4.1 : Initial Investment Decision [\[Old Content\]](#)[\[New Content\]](#) [\[RedLine Content\]](#)

Acquisition Management Policy:

Section 2.4.4.2 : Final Investment Decision [\[Old Content\]](#)[\[New Content\]](#) [\[RedLine Content\]](#)

Acquisition Management Policy:

Section 2.5.1 : What Must Be Done [\[Old Content\]](#)[\[New Content\]](#) [\[RedLine Content\]](#)

Acquisition Management Policy:

Section 2.7.1 : What Must Be Done [\[Old Content\]](#)[\[New Content\]](#) [\[RedLine Content\]](#)

Acquisition Management Policy:

Section 2.3.4 : Concept and Requirements Definition [\[Old Content\]](#)[\[New Content\]](#) [\[RedLine Content\]](#)

Acquisition Management Policy:

Section 2.5 : Solution Implementation [\[Old Content\]](#)[\[New Content\]](#) [\[RedLine Content\]](#)

SECTIONS EDITED:

Section 2.1.7 : Verification and Validation

Old Content: Acquisition Management Policy:

Section 2.1.7 : Verification and Validation

The FAA employs verification and validation throughout the acquisition management lifecycle to support investment decisions and approvals. Validation ensures the right product is built (fulfills its intended use). Verification ensures a product is built right (according to specifications). Verification and validation are performed early and incrementally throughout the lifecycle management process on select work products, product components, and products. Products are intended for delivery to a customer or end user. Product components are lower-level configuration items of the product. Work products represent, define, or direct product development. The following are sample work products, work components, and products subject to verification and validation:

- Operational concept or procedures
- Planning documents
- Requirement and specification documents
- Procurement and contractual documents
- Models, prototypes, and simulations
- Design documents
- Products and product components

New Content: Acquisition Management Policy:

Section 2.1.7 : Verification and Validation

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The FAA employs verification and validation throughout the acquisition management lifecycle in accordance with AMS V&V guidelines to support investment decisions and approvals. Validation ensures the right product is built (fulfills its intended use). Verification ensures a product is built right (according to specifications). Verification and validation are performed early and incrementally throughout the lifecycle management process on select work products, product components, and products. Products are intended for delivery to a customer or end user. Product components are lower-level configuration items of the product. Work products represent, define, or direct product development. The following are sample work products, work components, and products subject to verification and validation:

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Section 2.2 : Research and Systems Analysis

Old Content: Acquisition Management Policy:
Section 2.2 : Research and Systems Analysis

The FAA undertakes research, study, and analysis to discover applications of new technology, explore new opportunities for service delivery, solve problems with current operations, define

and stabilize requirements, and mitigate risk. These activities generate information supporting the integrity of identified capability shortfalls, future service needs, capability and system requirements, expectations of benefits, and design alternatives.

Research and systems analysis activity is tightly coupled with and supportive of other AMS lifecycle management processes. It is especially important during the early stages of lifecycle management when such activities as simulation, rapid prototyping, and computer-human interface development are conducted to define requirements, develop operational concepts, and reduce risk before entering into investment analysis.

Promising new technologies that have matured during research and systems analysis may be placed in the operational environment to evaluate effectiveness, validate concepts of use, collect performance data, determine requirements, and refine the business case. Fielded systems and equipment are supported while in the operational environment and removed and the site restored when activity is complete.

The FAA research and development (R&D) program supports all aspects of aviation from research on materials and human factors to development of new products, services, and procedures. It supports: regulation, certification, and standards development for aircraft, air operators, manufacturers, aircrews and other aviation personnel; airports; commercial space transportation; environment; modernization, operation, and maintenance of the national airspace system; and aerospace policy formulation, planning, and analysis.

Research activity across FAA is coordinated through the R&D portfolio process (<http://nas-architecture.faa.gov/nas/downloads/>). The R&D portfolio integrates research programs in four R&D appropriation accounts: Research Engineering and Development, Air Traffic Organization Capital, Airport Improvement Program, and Safety and Operations. The R&D executive board develops the R&D portfolio each year using strategic planning in the National Aviation Research Plan (NARP) as a guide. The NARP links FAA research activities to broader strategic planning in the FAA Flight Plan, Operational Evolution Plan, and the Joint Planning Development Office. The R&D executive board is supported by program planning teams assigned to prepare and manage specific research program areas.

Program managers execute research programs. They work closely with research sponsors (business units that own or share the R&D requirement) to ensure results meet customer needs. Annual evaluations determine whether research results are meeting performance targets and supporting FAA strategic goals. Evaluations also determine whether FAA strategic planning is leading the R&D portfolio in the right direction.

The RE&D Advisory Committee and its associated subcommittees review the R&D portfolio twice a year, first during budget formulation and later during portfolio evaluation.

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Section 2.3.4.1 : What Must Be Done

Old Content: Acquisition Management Policy:

Section 2.3.4.1 : What Must Be Done

NOTE: The plan for concept and requirements definition must be approved by the Vice Presidents (ATO) or Directors (non-ATO) of the service organization with the mission need and the operating service organization before the start of any CRD activity (see AMS Section 2.3.2.1). Roadmap planning in the enterprise architecture specifies when concept and requirements definition activity must begin.

- **Conduct detailed shortfall analysis.** The priority infrastructure or service shortfall in the enterprise architecture and its impact on service delivery is quantified in sufficient detail to serve as the basis for (1) determining realistic and economic alternative solutions to the service need, (2) developing a concept of use, and (3) defining preliminary program requirements. This detailed shortfall analysis is also the basis for quantifying likely program costs and benefits during investment analysis.
- **Develop range of alternatives.** The marketplace is surveyed to identify feasible and economic alternative solutions to the service need. Both material and non-material alternatives are evaluated. One must be the hypothesized "best" alternative in the enterprise architecture. Key factors to consider are safety, operational cost efficiencies (particularly those related to telecommunications and information systems security), technological maturity, and impact on the workforce and enterprise architecture. Alternatives should be qualitatively different from each other (e.g., different technologies such as ground-based versus airborne solutions or different acquisition strategies such as developmental versus commercially available items). Low risk, cost-effective, and operationally suitable commercial or non-developmental solutions are preferred. Alternatives may not meet 100 percent of preliminary requirements. Concept and technical descriptions are developed for each alternative.
- **Define concept(s) of use.** The concept of use explains how new capabilities will function within the existing operational environment and how they will satisfy the service need. It defines key elements of the required capability and the roles and responsibilities of key participants (e.g., controllers, maintenance technicians, pilots). It explains operational issues that system engineers must understand when developing requirements; identifies procedural issues that may lead to operational change; and establishes a basis for evaluating benefits. If proposed alternative solutions are significantly different from each other, more than one concept of use may be required. The concept of use is recorded in the preliminary program requirements document.
- **Develop preliminary requirements.** The functional analysis performed during service analysis is the foundation for defining preliminary requirements. Preliminary requirements specify how well the new capability must perform intended functions. Safety, security, integrated logistics support, and human factors are key disciplines that must be considered. Preliminary requirements specify *only* function and performance, and *do not* define a solution. They must be expressed such that the degree to which different solutions satisfy them can be measured and evaluated. Research and analysis or even prototyping may be necessary to define preliminary requirements adequately. They are recorded in the preliminary program requirements document.

- **Estimate rough lifecycle costs.** A rough lifecycle cost is developed for the range of alternatives that will be evaluated during initial investment analysis. A preliminary assessment of the availability of funding is also conducted. The head of the line of business uses this information as a basis for determining whether to pursue this service need in competition with all other service needs.
- **Develop enterprise architecture products and amendments.** Enterprise architecture products and amendments include the operational (business rule) and systems (engineering) view families. These families facilitate development, support, and execution of both service and infrastructure investment programs.
- **Plan for investment analysis.** The plan for investment analysis defines: (1) scope and assumptions; (2) alternatives and rough-order lifecycle cost estimates; and (3) organizational roles and responsibilities. It also specifies (4) a target schedule and defines (5) the resources needed for the work. By signing the plan for investment analysis, the organizations that will conduct the analysis agree to provide the resources necessary to complete the work.
- **Verify and validate key work products.** Incremental verification and validation is performed on key work products of concept and requirements definition, in accordance with the V&V Guidelines, including the concept of operations (developed through research and systems analysis), initial investment analysis plan, and preliminary requirements document (including the concept of use). Verification and validation activity supports the investment analysis readiness decision.
- **Prepare for the investment analysis readiness decision.** This includes development of the decision package, verification that the activities of concept and requirements definition are complete, and pre-briefings to designated decision-makers.

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- **Prepare for the investment analysis readiness decision.** This includes development of the decision package, verification that the activities of concept and requirements definition are complete, and pre-briefings to designated decision-makers.

Section 2.4.4.1 : Initial Investment Decision

Old Content: Acquisition Management Policy:

Section 2.4.4.1 : Initial Investment Decision

At the initial investment decision, the investment decision authority selects the best alternative for implementation or rejects all alternatives and specifies what action is needed next.

If the IDA approves an alternative, it:

- Selects an alternative for implementation;
- Approves entry into final investment analysis;
- Approves funding for any analytical or developmental work related to the selected alternative; and
- Designates a service organization to lead final investment analysis and be responsible for solution implementation.

Alternatives can be rejected if the technology is not mature enough or when requirements are not well-defined. If rejected, the IDA can approve such actions as research, further analysis, development, or terminate the investment.

New Content: Acquisition Management Policy:
Section 2.4.4.1 : Initial Investment Decision

The required work products of initial investment analysis must be verified and validated according to FAA V&V guidance prior to the initial investment decision. At the initial investment decision, the investment decision authority selects the best alternative for implementation or rejects all alternatives and specifies what action is needed next.

If the IDA approves an alternative, it:

- Selects an alternative for implementation;
- Approves entry into final investment analysis;
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Alternatives can be rejected if the technology is not mature enough or when requirements are not well-defined. If rejected, the IDA can approve such actions as research, further analysis, development, or terminate the investment.

Section 2.4.4.2 : Final Investment Decision

Old Content: Acquisition Management Policy:

Section 2.4.4.2 : Final Investment Decision

The investment decision authority makes the final investment decision. If the IDA disapproves the recommendation, it returns the investment package with specific instructions for further work or terminates the effort. If the IDA accepts the recommendations, it:

- Approves the investment program for implementation and delegates responsibility to the appropriate service organization;
- Approves the final program requirements document, final business case, and the implementation strategy and planning document;
- Approves the acquisition program baseline;
- Commits the FAA to funding the program segment, as specified in the acquisition program baseline;
- Approves updated enterprise architecture products and amendments; and
- Approves adjustments to FAA plans and budgets to reflect the investment decision.

Before the IDA approves documents at the initial or final investment decisions, they require approval from other officials, as can be found in the [AMS policy section on acquisition planning and control documents](#).

New Content: Acquisition Management Policy:

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Section 2.5.1 : What Must Be Done

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Section 2.5.1 : What Must Be Done

- **Finalize program planning.** The service organization reviews and updates program planning completed during final investment analysis (i.e., implementation strategy and planning document). Key stakeholders participate in this activity to ensure planning is complete and realistic. For example, if new systems are to be installed or existing facilities modified, service organization planners work with service-area offices so people and resources will be available when needed.
- **Obtain the solution.** The service organization oversees and coordinates execution of tasks and activities necessary to achieve the benefits projected for the investment program within approved cost and schedule baselines. This includes such activities as contract award, contract administration, program management, resource management, risk management, systems engineering, logistics support, test and evaluation, and site acquisition and adaptation. It may involve developing operational procedures and standards; obtaining physical, personnel, and information security; modifying the physical infrastructure; and coordinating collateral action by the aviation industry.
- **Verify Operational Readiness.** The service organization manages all activities necessary to install the solution at a designated test site(s) and test it thoroughly to verify operational readiness. Operational readiness encompasses operational effectiveness and

operational suitability. Operational effectiveness measures how well the solution satisfies mission need and operational requirements. Operational suitability measures how well a product can be integrated and employed for field use, considering such factors as compatibility, reliability, human performance factors, maintenance and logistics support, safety, and training. For designated programs, operational readiness is also assessed by independent operational test and evaluation. The solution may be installed, as necessary, at the FAA Academy, FAA Logistics Center, and William J. Hughes Technical Center before the in-service decision. In rare cases and with proper justification, the service organization may request authority to install at other specific sites. This authorization does not affect the regular in-service review process culminating in a final in-service decision, which must be adhered to before a product can be placed into operational service through the declaration of operational readiness date (ORD) and commissioning.

- **Update planning for in-service management.** The service organization plans how it will sustain and manage deployed assets throughout their full lifecycle. This includes in-service support, post implementation reviews and other evaluations of operational assets to measure performance, collection of performance data in support of service-level reviews, product sustainment strategy and actions, service-life extension, and eventual removal from service including site restoration.
- **Verify and validate key work products and products.** The service organization incrementally verifies and validates key work products and products of solution implementation, in accordance with the V&V Guidelines, including the contract/statement of work, design documents, specifications, and actual product/product components. Verification and validation activity supports contract award, product demonstration decision, production decision, product acceptance, and the in-service decision.
- **Prepare for in-service decision.** The service organization completes all activities necessary for the in-service decision. This includes resolution of all support issues identified by the operating service organization and integrated logistics management team; completion of management actions arising from the in-service review checklist and IOT&E report (designated programs only); resolution of stakeholder issues; development of the in-service decision briefing and action plan; and concurrence of key stakeholders.
- **Deploy the solution at all sites.** The service organization manages all activities necessary to deploy the solution at each site. This includes transportation and delivery of equipment, installation and checkout, contractor acceptance and inspection, integration, field familiarization, declaration of initial operational capability, joint acceptance and inspection, dual operations, declaration of operational readiness, and removal and disposal of obsolete equipment. Post implementation reviews are conducted at deployment sites to ensure user needs are satisfied, identify systemic problems that must be corrected, and determine whether cost, schedule, and benefits objectives are being achieved. The transition from solution implementation to in-service management extends over time, occurring at each site upon declaration of operational readiness or commissioning.

Investment programs that develop, modernize, or enhance systems or software follow the knowledge-based product development process shown in Figure 2.5.1-1. Table 2.5.1-1 contains the timing, criteria, and authority for each decision point.

Figure 2.5.1-1. FAA Knowledge-Based Product Development Process

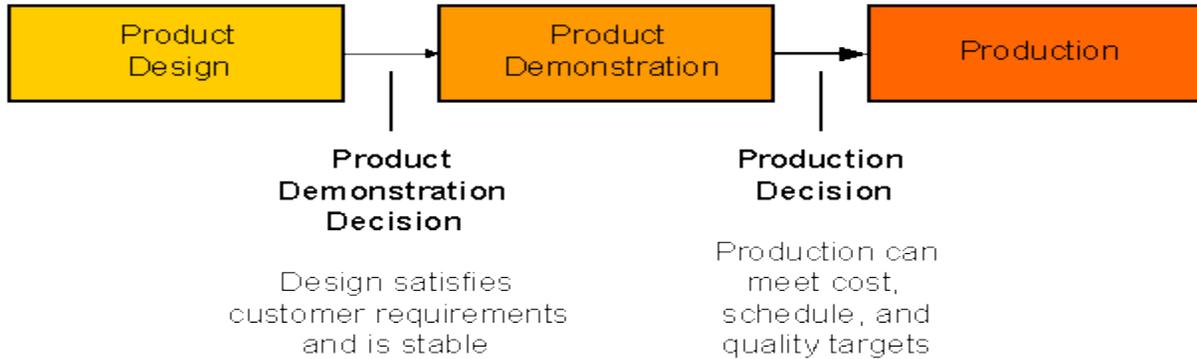


Table 2.1.5-1 Product Development Decision Points, Timing, Criteria, and Authority

Decision Point	Timing	Decision Authority	Decision Criteria
Product Demonstration Decision	After critical design review	Vice President or Director of the implementing service organization	<ul style="list-style-type: none"> • Key product characteristics are defined • Stakeholders agree that product design and functionality satisfy customer requirements • System design reviews are complete • Engineering drawings are complete • Detailed software/firmware design is complete, including critical software processes and threads • RMA goals are defined and planning is complete • Failure modes and effects analysis is complete • Critical manufacturing processes are identified
Production Decision	After completion of operational testing	Vice President or Director of the implementing service organization *	<ul style="list-style-type: none"> • First-article satisfies customer requirements in an operational environment • Data demonstrate that critical manufacturing processes and components will achieve RMA goals • First-article achieves contract RMA requirements • Stakeholders agree design is producible

* Unless otherwise designated by the JRC at the final investment decision.

**New Content: Acquisition Management Policy:
Section 2.5.1 : What Must Be Done**

- **Finalize program planning.** The service organization reviews and updates program planning completed during final investment analysis (i.e., implementation strategy and planning document). Key stakeholders participate in this activity to ensure planning is complete and realistic. For example, if new systems are to be installed or existing facilities modified, service organization planners work with service-area offices so people and resources will be available when needed.
- **Obtain the solution.** The service organization oversees and coordinates execution of tasks and activities necessary to achieve the benefits projected for the investment program within approved cost and schedule baselines. This includes such activities as contract award, contract administration, program management, resource management, risk management, systems engineering, logistics support, test and evaluation, and site acquisition and adaptation. It may involve developing operational procedures and standards; obtaining physical, personnel, and information security; modifying the physical infrastructure; and coordinating collateral action by the aviation industry.
- **Verify Operational Readiness.** The service organization manages all activities necessary to install the solution at a designated test site(s) and test it thoroughly to verify operational readiness. Operational readiness encompasses operational effectiveness and operational suitability. Operational effectiveness measures how well the solution satisfies mission need and operational requirements. Operational suitability measures how well a product can be integrated and employed for field use, considering such factors as compatibility, reliability, human performance factors, maintenance and logistics support, safety, and training. For designated programs, operational readiness is also assessed by independent operational test and evaluation. The solution may be installed, as necessary, at the FAA Academy, FAA Logistics Center, and William J. Hughes Technical Center before the in-service decision. In rare cases and with proper justification, the service organization may request authority to install at other specific sites. This authorization does not affect the regular in-service review process culminating in a final in-service decision, which must be adhered to before a product can be placed into operational service through the declaration of operational readiness date (ORD) and commissioning.
- **Update planning for in-service management.** The service organization plans how it will sustain and manage deployed assets throughout their full lifecycle. This includes in-service support, post implementation reviews and other evaluations of operational assets to measure performance, collection of performance data in support of service-level reviews, product sustainment strategy and actions, service-life extension, and eventual removal from service including site restoration.
- **Verify and validate key work products and products.** The service organization incrementally verifies and validates key work products and products of solution implementation, including the contract/statement of work, design documents, specifications, and actual product/product components. Verification and validation activity supports contract award, product demonstration decision, production decision, product acceptance, and the in-service decision.

- **Prepare for in-service decision.** The service organization completes all activities necessary for the in-service decision. This includes resolution of all support issues identified by the operating service organization and integrated logistics management team; completion of management actions arising from the in-service review checklist and IOT&E report (designated programs only); resolution of stakeholder issues; development of the in-service decision briefing and action plan; and concurrence of key stakeholders.
- **Deploy the solution at all sites.** The service organization manages all activities necessary to deploy the solution at each site. This includes transportation and delivery of equipment, installation and checkout, contractor acceptance and inspection, integration, field familiarization, declaration of initial operational capability, joint acceptance and inspection, dual operations, declaration of operational readiness, and removal and disposal of obsolete equipment. Post implementation reviews are conducted at deployment sites to ensure user needs are satisfied, identify systemic problems that must be corrected, and determine whether cost, schedule, and benefits objectives are being achieved. The transition from solution implementation to in-service management extends over time, occurring at each site upon declaration of operational readiness or commissioning.

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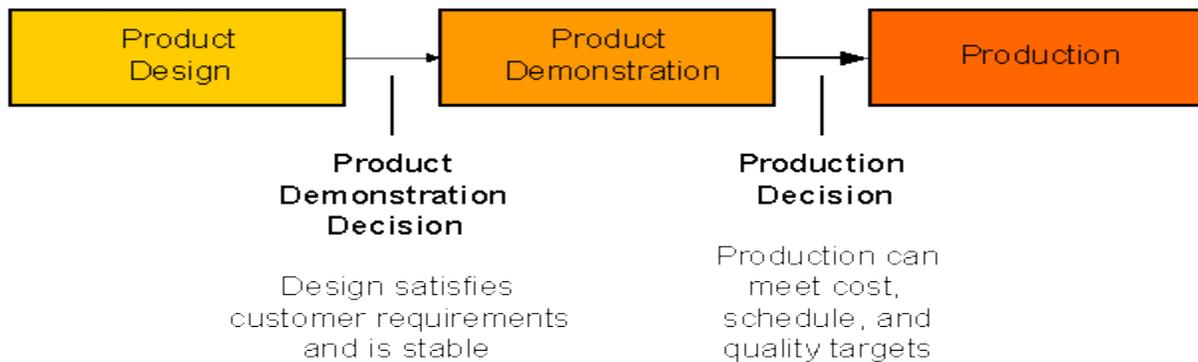


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			<p>processes and threads</p> <ul style="list-style-type: none"> • RMA goals are defined and planning is complete • Failure modes and effects analysis is complete • Critical manufacturing processes are identified
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Section 2.5.1 : What Must Be Done**

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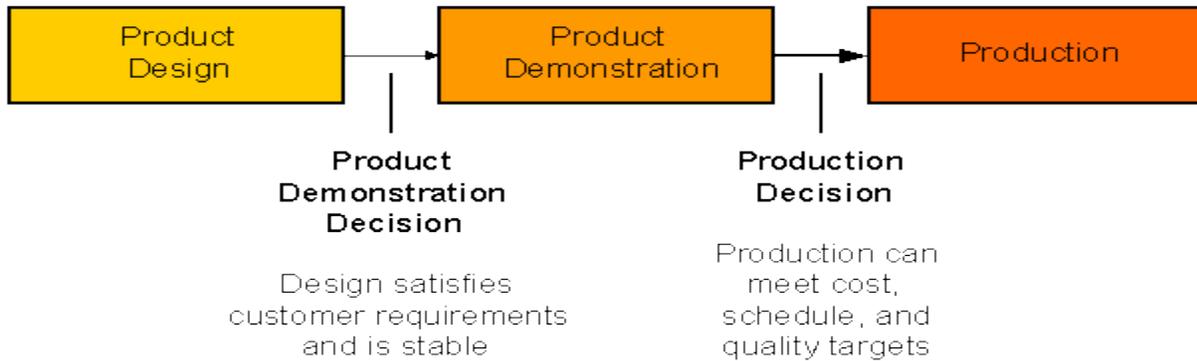


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Section 2.7.1 : What Must Be Done

**Old Content: Acquisition Management Policy:
Section 2.7.1 : What Must Be Done**

- **Deliver air traffic control and other business services.** This is done using infrastructure, procedures, personnel, and other assets as assigned and funded.
- **Sustain services within baseline values.** Management and engineering actions throughout in-service management sustain and improve service delivery, correct deviations from cost and performance standards, and improve quality. These actions include modifications to hardware and software to solve latent or discovered technical problems, process changes to improve performance, planned block upgrades and product improvements, and sustainment actions that lower operating costs. It involves the management of personnel, information systems, money, logistics support, spare parts, technical resources, and other assigned assets. Management techniques include fiscal and workforce planning, contract award and administration, fiscal and program control, and process management to achieve cost, performance, and benefit objectives. All modifications to fielded assets must be in accordance with the enterprise architecture. If a planned modification requires a change to the architecture, appropriate amendments and products must be developed and approved.
- **Evaluate performance and customer expectations.** Post implementation review(s) at deployment sites help to determine whether performance and benefits are being achieved. When projections are not being realized, corrective action is planned and implemented. Periodic operational evaluations of fielded assets continue throughout in-service management to identify performance shortfalls, determine trends in the cost of ownership, identify adverse support trends, and solve systemic operational or support problems. These evaluations are the basis for revalidating the merit of sustaining investment assets or the need for other action. Findings are fed back into service analysis, where it is determined whether to continue to sustain existing assets or recommend new investments to solve systemic operational problems in the service environment.
- **Prioritize opportunities for operational funding.** Service organizations participate in cross-organizational planning to review, integrate, and prioritize the allocation of operational resources to fielded services and assets. This objective is to continue support for high-ranking service needs and reduce or terminate support for low-value or redundant assets. Recommendations are presented to the Joint Resources Council for approval.
- **Support service delivery.** This includes corrective and preventive maintenance, supply support, second-level engineering, depot-level repair, modification of hardware and software to improve performance, test and support equipment, and transportation of supplies.
- **Sustain in-service support.** Any modification to fielded assets (e.g., block upgrade, planned product improvement, problem correction) must be accompanied by concomitant changes to key elements of the support infrastructure such as training, documentation, spare parts, and engineering support. This includes development, attrition, and refresher training for personnel who directly operate, maintain, or provide support functions.
- **Update the OMB Exhibit 300 for annual budget cycle (designated programs only).** Annual updates reflect program changes and move the budget submission forward one

year. The OMB Exhibit 300 must continue to achieve a passing score from the Office of Management and Budget.

- **Update in-service management planning documents.** Service organizations review and update in-service planning documents as needed.
- **Execute emergency sustainment actions.** This includes planning for contingency and emergency responses. Highest priority services are sustained even if performance goals for lower priority services cannot be met.
- **Maintain physical, personnel, and information security at all FAA facilities.** This includes environmental threat and facility assessment and accreditation in accordance with FAA internal security planning.
- **Sustain the physical infrastructure.** Resources are planned and allocated to sustain utilities, buildings, grounds, structures, roads, telecommunications, handling of hazardous materials, lightning protection, bonding, grounding, heating, cooling, and special access.
- **Acquire, manage, and dispose of property.** This applies to FAA-owned and leased properties, as well as to non-federal facilities with external sponsors. This activity may involve the purchase or lease of buildings, structures, and grounds, as well as removal and disposal of no longer used equipment, systems, services, products, facilities, real property, and resources. Removal and disposal includes decommissioning, dismantling, and demolishing of systems and equipment; restoring sites including environmental cleanup and disposal of hazardous materials; disposing of government property; recovering precious metals; and reusing surplus assets.
- **Manage and control configuration of all services and service components.** This includes the submission of NAS change proposals to the appropriate approval board to baseline, install, and manage changes to NAS systems, software, and equipment. Coordination with the appropriate systems engineering organization is necessary to ensure changes are compatible with and reflected in the enterprise architecture.
- **Verify and validate key work products and products.** The service organization incrementally verifies and validates key work products and products of in-service management, in accordance with the V&V Guidelines, including NAS change proposals (includes the actual changes/improvements to product/product components) and System Support Directives. In addition, key work products and products that originated in other phases of the lifecycle, but are modified during in-service management would also be subject to V&V for the modified content. Verification and validation activity supports decisions to implement and deploy procedural or product improvements.
- **Sustain flight inspections, aircraft certification, and regulatory requirements.** This pertains to all safety-related quality assurance actions, including establishing safety standards for operations, monitoring safety performance, issuing and maintaining certificates and licenses, and developing and revalidating procedures such as approach and landing procedures.

New Content: Acquisition Management Policy:

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Section 2.3.4 : Concept and Requirements Definition

Old Content: Acquisition Management Policy:

Section 2.3.4 : Concept and Requirements Definition

All investment opportunities that require funding outside the scope of an approved acquisition program baseline undergo concept and requirements definition. This includes upgrades to existing capability without approved investment funding.

Concept and requirements definition translates priority operational needs in the enterprise architecture into preliminary requirements and a concept of use for the capability needed to improve service delivery. It also quantifies the service shortfall in sufficient detail for the definition of realistic preliminary requirements and the estimation of potential costs and benefits. Finally, concept and requirements definition identifies the most promising alternative solutions

able to satisfy the service need, one of which must be the alternative in the enterprise architecture.

Planning for concept and requirements definition begins when a roadmap in the enterprise architecture specifies action must be taken to address a priority service or infrastructure need. These needs typically relate to existing or emerging shortfalls in the “as is” architecture or essential building blocks of the “to be” architecture. Should a service organization wish to pursue an investment opportunity not in an enterprise architecture roadmap, it must first develop architectural change products and amendments and get endorsement from the cognizant architectural review board.

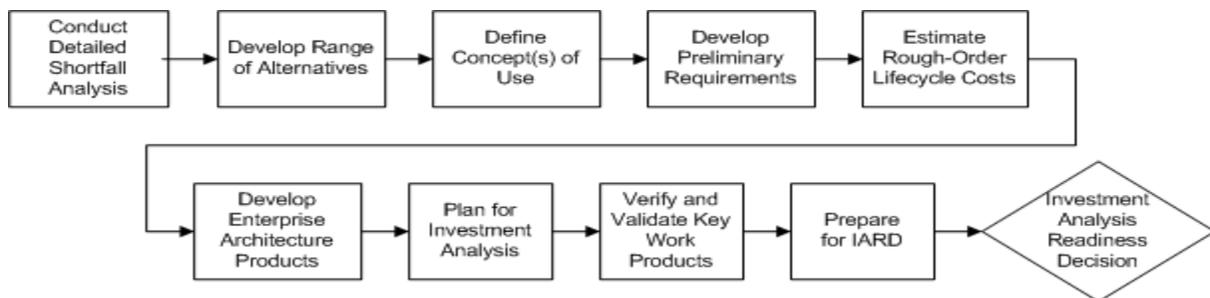
The FAA may undertake research activity or employ research by other agencies or industry to define the operational concept, develop preliminary requirements, demonstrate and refine computer-human interfaces, reduce risk, or achieve customer buy-in to potential solutions to mission need.

A nonmaterial solution that emerges during concept and requirements definition may be implemented without proceeding further in the lifecycle management process, provided it satisfies the need, can be achieved within approved budgets, and is acceptable to users and customers. This determination is made by the Vice President or Director of the service organization with the mission need with the concurrence of the appropriate enterprise architecture control board.

Key functional disciplines such as safety, security, and human factors *must* participate in the activities of concept and requirements definition in order to determine mandatory requirements and evaluate their impact on potential alternative solutions.

The key activities of concept and requirements definition are shown in Figure 2.3.4-1.

Figure 2.3.4-1 Key Activities of Concept / Requirements Definition



Note: The activity flow diagram specifies what must be done during concept and requirements definition. The scope and order of work may be adjusted for each investment initiative.

**New Content: Acquisition Management Policy:
Section 2.3.4 : Concept and Requirements Definition**

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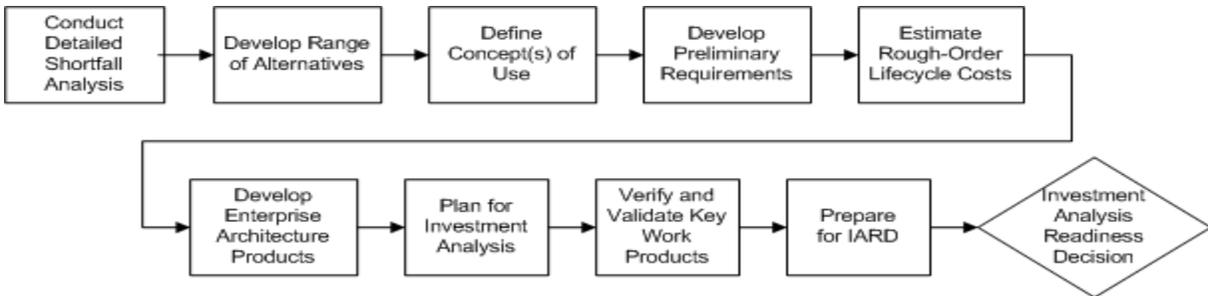
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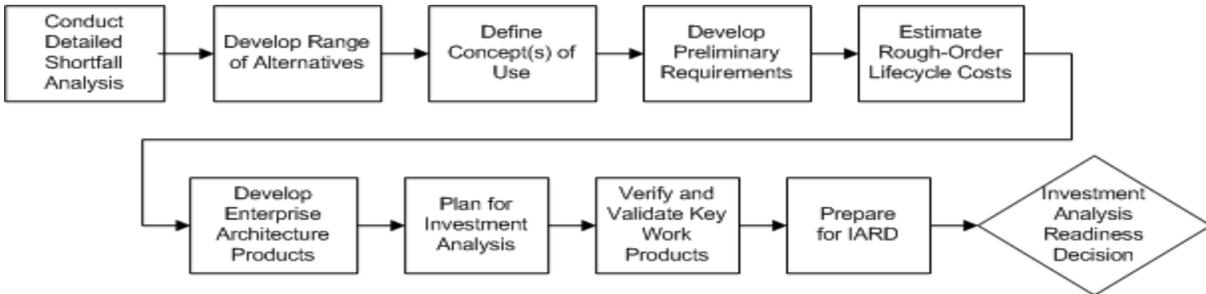
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A nonmaterial solution that emerges during concept and requirements definition may be implemented without proceeding further in the lifecycle management process, provided it satisfies the need, can be achieved within approved budgets, and is acceptable to users and customers. This determination is made by the Vice President or Director of the service organization with the mission need with the concurrence of the appropriate enterprise architecture control board.

Key functional disciplines such as safety, security, and human factors *must* participate in the activities of concept and requirements definition in order to determine mandatory requirements and evaluate their impact on potential alternative solutions.

The key activities of concept and requirements definition are shown in Figure 2.3.4-1.

Figure 2.3.4-1 Key Activities of Concept *and* Requirements Definition



Note: The activity flow diagram specifies what must be done during concept and requirements definition. The scope and order of work may be adjusted for each investment initiative.

Section 2.5 : Solution Implementation

Old Content: Acquisition Management Policy:

Section 2.5 : Solution Implementation

Solution implementation begins at the final investment decision when the investment decision authority approves and funds an investment program or segment, establishes the acquisition program baseline for variance tracking, and authorizes the service organization to proceed with implementation. Solution implementation ends when a new service or capability is commissioned into operational use at all sites.

Detailed program planning, including the solicitation and evaluation of offers for prime contract(s), occurs during final investment analysis and before the final investment decision. This ensures accurate contract costs, risks, and schedules are reflected in the acquisition program baseline and program planning documents. These plans and baselines are revalidated, and updated if necessary, after contract award to ensure they can realistically serve as the management construct for program implementation. They are kept current throughout solution implementation.

The overarching goal of solution implementation is to satisfy user requirements and achieve the benefit targets in the business case analysis report. To achieve this, the service organization must work with users and stakeholders throughout solution implementation to resolve issues as they arise. Actions outside the direct control of the service organization (e.g., regulatory changes) are

recorded in the implementation strategy and planning document and tracked at program reviews throughout solution implementation.

The activities undertaken during solution implementation vary widely and are tailored for the solution or capability being implemented. FAST contains tailored process flowcharts for representative types of investment program (systems and software, facilities, services). These flowcharts identify actions and activities the service organization may need to execute to achieve projected capability, value, and benefits. Instructions, templates, best practices, good examples, and lessons-learned are attached to many activities in the flowcharts to assist lifecycle management specialists as they plan and execute activities that make sense for their investment program.

Although service organizations are empowered to implement investment programs and manage them over their lifecycle, they must adhere to built-in checks and balances. The acquisition program baseline establishes the performance, cost, schedule boundaries within which the service organization is authorized to operate. The service organization must report all negatives variance from cost, schedule, and performance baseline measures and undertake corrective action in accordance with AMS Section 1.2.3.

The service organization monitors cost, schedule, and performance status against targets in the acquisition program baseline on a continuing basis, and takes corrective action when variances from planning objectives arise. The service organization also reports program status at service-level reviews. The focus of these reviews is to identify high-risk issues requiring resolution and to ensure all actions necessary to achieve projected value and benefits are being executed satisfactorily, particularly those outside the control of the service organization. The service organization applies the principles of earned value management to development, modernization, and enhancement investment programs, and when applicable, uses audits to ensure contract costs are proper and allowable.

The service organization captures expenditures consistent with the program baseline work breakdown structure fashioned during final investment analysis.

Solution implementation is organized into the six sets of activity shown in Figure 2.5.1-1. These activities are tailored to the special requirements of each investment program.

Figure 2.5.1-1 Primary Activities of Solution Implementation



Note: The activity flow diagram specifies what must be done during solution implementation. The scope and order of work may be adjusted for each investment initiative.

**New Content: Acquisition Management Policy:
Section 2.5 : Solution Implementation**

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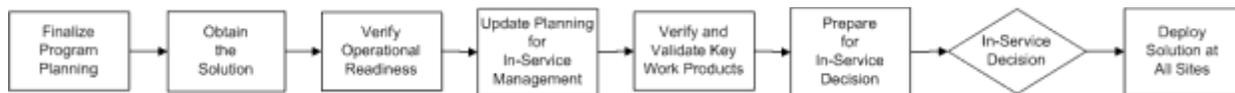
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**Red Line Content: Acquisition Management Policy:
Section 2.5 : Solution Implementation**

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Figure 2.5.1-1 Primary Activities of Solution Implementation



Note: The activity flow diagram specifies what must be done during solution implementation. The scope and order of work may be adjusted for each investment initiative.